

**PATENT APPLICATION**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re application of

Docket No: Q67539

Masafumi NISHITANI, et al.

Appln. No.: 10/000,219

Group Art Unit: 1797

Confirmation No.: 9175

Examiner: Thanh P. DUONG

Filed: December 4, 2001

For: GOLF CLUB

**REPLY BRIEF PURSUANT TO 37 C.F.R. § 41.41**

**MAIL STOP APPEAL BRIEF - PATENTS**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 41.41, Appellant respectfully submits this Reply Brief in response to the Examiner's Answer dated October 16, 2007. Entry of this Reply Brief is respectfully requested.

**Table of Contents**

STATUS OF CLAIMS .....	2
GROUNDSS OF REJECTION TO BE REVIEWED ON APPEAL .....	3
ARGUMENT.....	6
CONCLUSION .....	26

REPLY BRIEF UNDER 37 C.F.R. § 41.41  
Application Serial No.: 10/000,219  
Attorney Docket No. Q67539

**STATUS OF CLAIMS**

Claims 1, 3-7, 9-12, and 15-48 are all the claims pending in the application, all stand rejected, and are all the claims that are the subject of the present appeal. Specifically, claims 1, 3-7, 10-12, 17-26, 33-40, and 43-45 stand rejected under 35 U.S.C. § 102(e) as being anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as obvious over Chen (U.S. Patent No. 6,368,233); claims 24-26, 40, and 46 stand rejected under 35 U.S.C. § 102(e) as being anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as being obvious over Ciasullo (U.S. Patent No. 6,739,984); claims 1, 3-7, 9-12, 15-23, and 43-44 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Kosugi et al. (U.S. Patent No. 6,106,142) in view of Shaw et al. (U.S. Patent No. 5,423,535); claims 27-29, 41, and 47 stand rejected under 35 U.S.C. § 102(e) as being anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as obvious over Peterson (U.S. Patent No. 6,339,869); and claims 30-32, 42, and 48 stand rejected under 35 U.S.C. § 102(e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Galy (U.S. Patent No. 5,971,867).

Claims 2, 8, and 13-14 were previously cancelled.

REPLY BRIEF UNDER 37 C.F.R. § 41.41  
Application Serial No.: 10/000,219  
Attorney Docket No. Q67539

**GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

The issues involved in this appeal are:

- A) Whether claims 1, 7, and 21 are unpatentable under 35 U.S.C. § 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over Chen (U.S. Patent No. 6,368,233) (dependent claims 4-6, 10-12, 17-20, 22-23, 33-36 and 43-45 standing or falling with their respective independent claims);
- B) Whether claim 3 is unpatentable under 35 U.S.C. § 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over Chen;
- C) Whether claims 37, 38, and 39 are unpatentable under 35 U.S.C. § 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over Chen;
- D) Whether claim 24 is unpatentable under 35 U.S.C. § 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over Chen (dependent claims 25-26 standing or falling with independent claim 24);
- E) Whether claim 40 is unpatentable under 35 U.S.C. § 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over Chen;
- F) Whether claim 24 is unpatentable under 35 U.S.C. § 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over Ciasullo (U.S. Patent No. 6,739,984) (dependent claims 25-26 and 46 standing or falling with independent claim 24);
- G) Whether claim 40 is unpatentable under 35 U.S.C. § 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over Ciasullo;

REPLY BRIEF UNDER 37 C.F.R. § 41.41  
Application Serial No.: 10/000,219  
Attorney Docket No. Q67539

H) Whether claims 1, 7, and 21 are unpatentable under 35 U.S.C. § 103(a) as being obvious over Kosugi et al. (“Kosugi”, U.S. Patent No. 6,106,412) in view of Shaw et al. (“Shaw”, U.S. Patent No. 5,423,535) (dependent claims 4-6, 10-12, 17-20, 22-23, and 43-44 standing or falling with their respective independent claims);

I) Whether claims 3 and 9 are unpatentable under 35 U.S.C. § 103(a) as being obvious over Kosugi in view of Shaw;

J) Whether claims 15 and 16 are unpatentable under 35 U.S.C. § 103(a) as being obvious over Kosugi in view of Shaw;

K) Whether claim 27 is unpatentable under 35 U.S.C. § 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over Peterson (U.S. Patent No. 6,339,869) (dependent claims 28-29 and 47 standing or falling with independent claim 27);

L) Whether claim 41 is unpatentable under 35 U.S.C. § 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over Peterson (U.S. Patent No. 6,339,869);

M) Whether claim 30 is unpatentable under 35 U.S.C. § 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over Galy (U.S. Patent No. 5,971,867) (dependent claims 31-32 and 48 standing or falling with independent claim 30); and

N) Whether claim 42 is unpatentable under 35 U.S.C. § 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over Galy.

REPLY BRIEF UNDER 37 C.F.R. § 41.41

Application Serial No.: 10/000,219

Attorney Docket No. Q67539

For purposes of this appeal, the dependent claims that stand or fall together with the respective independent claims are indicated above for each ground of rejection. Further, the rejections of the dependent claims that are separately argued are indicated above and by separate headings in the following section.

REPLY BRIEF UNDER 37 C.F.R. § 41.41  
Application Serial No.: 10/000,219  
Attorney Docket No. Q67539

## **ARGUMENT**

Most of the arguments set forth in the Examiner's Answer mailed October 16, 2007 ("Answer") are already issues addressed in the Appellant's Brief on Appeal filed July 2, 2007 ("Brief"), but the following responsive remarks are appropriate.

### ***A. Chen – Independent Claims 1, 7, 21***

The rejection of independent claims 1, 7, and 21, as well as the claims dependent therefrom, is improper, as Chen fails to disclose the claimed structure and the Examiner has failed to establish *prima facie* case obviousness.<sup>1</sup>

1. The striking face of Chen is a single piece formed of a single material, not a striking face including a plurality of metal pieces, as claimed.

The Examiner has failed to provide any supporting rationale for the alleged interpretation of a transitional arcuate piece, which is never described by Chen as being any part of a striking face, as a striking face member or a piece of the striking face itself. Rather, Chen teaches a striking face having a single piece formed of a single material (i.e., titanium), and, as evidenced by the formation of the grooves solely on the main piece 62, the arcuate piece is not a "striking face". Indeed, as noted in Appellant's Brief, arcuate piece 64 is provided at the periphery of the actual striking surface, and merely provides a transition between the striking face provided by main piece 62 to the main body 50. (Brief at 15-16.)

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<sup>1</sup> In the following, Appellant will make reference to the Declaration Under 37 C.F.R. § 1.132 of Masaomi Hiruta ("Decl. at \_\_\_\_"), which was submitted with the Response Under 37 C.F.R. § 1.111 filed Sept. 26, 2006.

REPLY BRIEF UNDER 37 C.F.R. § 41.41  
Application Serial No.: 10/000,219  
Attorney Docket No. Q67539

In response to the above arguments, the Examiner contends:

“Chen discloses ‘the front shell (60) is formed of a main piece 62 of titanium, and an arcuate piece (64) of stainless steel.’] Thus, the *striking face 62* including [sic] a plurality of pieces (main piece 62 of titanium and arcuate piece 64 of stainless steel).”

Answer at 11 (emphasis added).

The Examiner’s analysis is again flawed, and relies on a conclusory contention that the “arcuate piece 64” is somehow a striking face component, despite there being no support for such an interpretation in the disclosure of Chen itself. First, Chen describes a single piece striking face construction. Element 62 is shown and described as a single component, not as a plurality of pieces. Nowhere does Chen suggest that arcuate piece 64 forms any portion of a striking face of its golf club head construction, and the Examiner offers no evidence to support any interpretation to the contrary. Thus, Chen fails to suggest at least the striking face member limitation of claim 1.

2. Chen does not suggest a laser welded structure in which press-forming is subsequently performed on a plurality of metal pieces fixed together by laser welding, as defined by claim 1.

The Examiner has not given proper consideration to the limitation of “wherein said plurality of metal pieces are fixed together by laser welding and press forming is performed on the plurality of metal pieces that are fixed together to form a curved surface portion of the striking face member,” as recited by claim 1. Indeed, Appellant has shown, with reference to the Declaration Under 37 C.F.R. § 1.132 of Masaomi Hiruta, that conventional welding provides

REPLY BRIEF UNDER 37 C.F.R. § 41.41  
Application Serial No.: 10/000,219  
Attorney Docket No. Q67539

welded pieces that *differ structurally* from a laser welded structure, as claimed. For example, the requirement of having gaps present between pieces that are conventionally welded, the additional weight added from the welding rod material, the presence of a “surface sink” that occurs in conventional welding, and the occurrence of brittleness over a larger area in conventional welding resulting in a comparatively weaker weld structure. (See Brief at 18-19.) The Examiner’s allegation that Chen discloses all the “structural” features of claims 1, 7 and 21 is inaccurate because a laser welded structure is in fact structurally distinct from a conventionally welded structure, as Appellant has shown.

Numerous *structural differences* exist between a conventionally welded golf club structure, as disclosed by Chen, and a golf club head in which a plurality of pieces of the striking face member are laser welded and press formed is performed on the plurality of metal pieces that are fixed by laser welding, as claimed. Thus, the Examiner’s assertion that these features do not impart structural limitation, as alleged at page 10 of the Office Action, is incorrect, and Chen cannot anticipate the combination of features defined by claims 1, 7 and 21.

3. Product-by-process limitations must be given patentable weight, to the extent that a distinct and non-obvious structure is defined.

In his Answer, the Examiner again improperly relies on *In re Thorpe* and *In re Fessman* and fails to afford proper patentable weight to the product-by-process limitations of claims 1, 7, and 21. (Answer at 12.) Neither *In re Thorpe* nor *In re Fessman* grant the Examiner license to ignore product-by-process limitations based on conclusory allegations of equivalent structure and unsupported conclusions of obviousness. As discussed in greater detail in Appellant’s Brief, the

REPLY BRIEF UNDER 37 C.F.R. § 41.41

Application Serial No.: 10/000,219

Attorney Docket No. Q67539

“same product” as disclosed in Chen is not claimed, and numerous structural differences have been demonstrated, with support by the Hiruta Declaration. Product-by-process limitations must be given appropriate patentable weight to the extent these limitations define a distinct product. In maintaining his rejections, the Examiner has not only failed to properly respond to the structural distinctions Appellant has noted, but has further failed to address the improper application of the case law on which he relies. (*See* Brief at 21-22.)

Further, the Examiner has failed to properly consider the Declaration Under 37 C.F.R. § 1.132 of Mr. Hiruta, filed with Appellant’s Response Under 37 C.F.R. § 1.111 of September 26, 2006. Indeed, the Examiner has done little more than acknowledge receipt of this Declaration, but does not adequately address the substance of the numerous distinctions noted therein. *See* Office Action of December 20, 2006 at 10. Such cursory treatment of this Declaration, as well as Appellant’s arguments in connection therewith, is improper:

“Where the evidence is insufficient to overcome the rejection, the examiner must *specifically explain* why the evidence is insufficient. General statements such as ‘the declaration lacks technical validity’ or ‘the evidence is not commensurate with the scope of the claims’ without an explanation supporting such findings are insufficient.”

*See* M.P.E.P. § 716.01(emphasis added.)

As demonstrated previously, Appellant has adduced numerous reasons as to why Chen does not anticipate all the features of claims 1, 7, and 21. The Examiner’s analysis under 35 U.S.C. § 102 is flawed and cannot form any proper basis for rejecting these claims. “Anticipation under §

REPLY BRIEF UNDER 37 C.F.R. § 41.41  
Application Serial No.: 10/000,219  
Attorney Docket No. Q67539

102 requires ‘the presence in a single prior art disclosure of all elements of a claimed invention arranged as in that claim.’” *Sandt Tech., Ltd. v. Resco Metal & Plastics Corp.*, 264 F.3d 1344, 1350 (Fed. Cir. 2001). “[A]nticipation does not permit an additional reference to supply a missing claim limitation.” *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1335 (Fed. Cir. 2002).

“Although this disclosure requirement presupposes the knowledge of one skilled in the art of the claimed invention, that presumed knowledge does not grant a license to read into the prior art reference teachings that are not there.” *Motorola, Inc. v. Interdigital Tech Corp.*, 121 F.3d 1461, 1473 (Fed. Cir. 1997). “An anticipating reference must describe the patented subject matter with sufficient clarity and detail to establish that the subject matter existed in the prior art and that such existence would be recognized by persons of ordinary skill in the field of the invention.” *Crown Operations Int'l, Ltd. v. Solutia, Inc.*,” 289 F.3d 1367, 1375 (Fed. Cir. 2002).

Prior art does not ‘anticipate’ for purposes of § 102 even “if the general aspects are the same and the differences in minor matters is [sic] ... such as would suggest itself to one of ordinary skill in the art.” *BOC Health Care, Inc. v. Nellcor, Inc.*, 892 F. Supp. 598, 603 (D. Del. 1995) (quoting *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716 (Fed. Cir. 1984)); see also *Jamesbury Corp. v. Litton Indus. Prod., Inc.*, 756 F.2d 1556, 1560 (Fed. Cir. 1985) (“A prior art disclosure that ‘almost’ meets [the] standard ... does not anticipate.”).

In order to anticipate, “[t]he prior art reference must also be enabling, thereby placing the allegedly disclosed matter in the possession of the public.” *Key Pharms., Inc., v. Hereon Labs.*

REPLY BRIEF UNDER 37 C.F.R. § 41.41

Application Serial No.: 10/000,219

Attorney Docket No. Q67539

*Corp.*, 981 F. Supp. 299, 311 (D. Del. 1997), *aff'd*, 161 F.3d 709 (Fed. Cir. 1998). “A claimed invention cannot be anticipated by a prior art reference if the allegedly anticipating disclosures cited as prior art are not enabled.” *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1354 (Fed. Cir. 2003). “To anticipate a claim, a reference must disclose every element of the challenged claim and enable one skilled in the art to make the anticipatory subject matter.” *PPG Indus., Inc. v. Guardian Indus. Corp.*, 75 F.3d 1558, 1566 (Fed. Cir. 1996).

4. The Examiner has failed to provide a sufficient motivation to modify the disclosure of Chen.

In the Examiner’s Answer, the Examiner does not address Appellant’s arguments directed to the Examiner’s alternative contention that the features of claims 1, 7, and 21 would have been obvious in view of Chen. (See Answer at 12-13.) As noted in Appellant’s Brief, the Examiner simply asserts, without support, that “there is nothing unobvious about laser welding club parts together over conventional welding techniques since laser welding is more precise and has less heat effecting area, which minimizes corrosion and cracking.” (See Brief at 22-25.)

The conclusory opinion of the Examiner without objective evidence of the alleged motivation to modify Chen beyond the four corners of its actual disclosure, is insufficient to establish *prima facie* obviousness. Indeed, the asserted motivation of the Examiner does not even address the further feature of the *press forming* (claims 1 and 21) or *plastic working* (claim 7) performed on the plurality of metal pieces *after* they are fixed together by laser welding to form a curved surface portion of the striking face member (claims 1 and 7) or outside common surface (claim 21), as claimed. Rather, the only semblance of an alleged motivation is directed

REPLY BRIEF UNDER 37 C.F.R. § 41.41  
Application Serial No.: 10/000,219  
Attorney Docket No. Q67539

to conclusory statements regarding laser welding versus conventional welding, which does not account for all the claimed features that are deficient in Chen.

In rejecting claim 1, the Examiner has failed to provide such specificity, or, for that matter, any objective evidentiary support, for the assertion that modifying the actual disclosure of Chen in such a manner as to include features of laser welding the plurality of pieces of the striking face member *followed by* press-forming in the manner claimed would have been obvious. As noted above, the proffered motivation does not even address all the deficiencies of the reference relied upon. The rejections of independent claims 7 and 21 are likewise deficient.

“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *See KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1741 (2007) (quoting *In re Kahn*, 441 F.3d at 987-88). Section 103 requires that obviousness be determined with respect to the invention as a whole. *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143 (Fed. Cir. 1985). This determination is essential since “virtually all [inventions] are combinations of old elements.” *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998). (citation omitted). “Thus, every element of a claimed invention may often be found in the prior art. Identification in the prior art of each individual part claimed, however, is insufficient to defeat patentability of the whole claimed invention.” *In re Kotzab*, 217 F.3d 1365, 1369-70 (Fed. Cir. 2000). (citing *In re Rouffet*, 149 F.3d at 1357).

REPLY BRIEF UNDER 37 C.F.R. § 41.41  
Application Serial No.: 10/000,219  
Attorney Docket No. Q67539

The Federal Circuit has emphasized that the pertinent obviousness inquiry takes place at the time of the invention. *In re Dembicza*k, 175 F.3d 994, 999 (Fed. Cir. 1999), abrogated on other grounds, *In re Gartside*, 203 F.3d 1305 (2000). *Dembicza*k states:

Measuring a claimed invention against the standard established by section 103 requires the oft-difficult but critical step of casting the mind back to the time of the invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field.

*Id.* at 999 (citations omitted); see also *Ecolochem, Inc. v. S. California Edison Co.*, 227 F.3d 1361, 1371 (Fed. Cir. 2000). Thus, the use of hindsight in an obviousness analysis is always impermissible.

The Federal Circuit has singled out the danger involved in using hindsight to combine prior art references. As *Ecolochem* states, there must be a showing that there was a motivation or suggestion to combine the references at the time of invention:

Our case law makes clear that the best defense against hindsight-based obviousness analysis is the rigorous application of the requirement for a showing of a teaching or motivation to combine prior art references. Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability – the essence of hindsight.”.

*Id.* at 1371-72. (internal quotation and citations omitted). It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to ‘[use]

REPLY BRIEF UNDER 37 C.F.R. § 41.41  
Application Serial No.: 10/000,219  
Attorney Docket No. Q67539

that which the inventor taught against its teacher. *In re Lee*, 277 F.3d 1338, 1344 (Fed. Cir. 2002) (citation omitted). Close adherence to this methodology is especially important in cases where the very ease with which the invention can be understood may prompt one to fall victim to the insidious effect of a hindsight syndrome wherein that which only the invention taught is used against its teacher. *In re Kotzab*, 217 F.3d at 1369.

“The genius of invention is often a combination of known elements which in hindsight seems preordained. To prevent hindsight invalidation of patent claims, the law requires some ‘teaching, suggestion or reason’ to combine cited references.” *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351 (Fed. Cir. 2001) (citation omitted). Therefore, “[i]n order to prevent a hindsight-based obviousness analysis, [the Federal Circuit has] clearly established that the relevant inquiry for determining the scope and content of the prior art is whether there is a reason, suggestion, or motivation in the prior art or elsewhere that would have led one of ordinary skill in the art to combine the references.” *Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 664 (Fed. Cir. 2000). “The absence of such a suggestion to combine is dispositive in an obviousness determination.” *Gambro Lundia AB v. Baxter Healthcare Corp.*, 110 F.3d 1573, 1579 (Fed. Cir. 1997).

Evidence must be provided that “a skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed.” *Ecolochem*, 227 F.3d at 1375 (citing *In re Rouffet*, 149 F.3d at 1357); *see also In re Kotzab*, 217 F.3d at 1371. (“[P]articular

REPLY BRIEF UNDER 37 C.F.R. § 41.41  
Application Serial No.: 10/000,219  
Attorney Docket No. Q67539

findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed.”).

A motivation to combine cannot come simply from the fact that the asserted prior art is within the same field. *See Winner Int'l Royalty Corp. v. Wang*, 202 F.3d 1340, 1349 (Fed. Cir. 2000) (rejecting argument that prior art was combinable merely because the art was within the same field). Even when obviousness is based on a single prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference.” *In re Kotzab*, 217 F.3d at 1370.

Motivation to combine requires an appreciation of the desirability of making the combination. It is not measured by the feasibility of making the combination. *Winner Int'l*, 202 F.3d at 1349; *see also Ecolochem*, 227 F.3d at 1372 (“[T]he question is whether there is something in the prior art as a whole to suggest the desirability ... of making the combination.”). Failure to consider secondary considerations in reaching a determination of obviousness constitutes reversible error. *See Knoll Pharm. Co. v. Teva Pharms. USA, Inc.*, 367 F.3d 1381, 1385 (Fed. Cir. 2004). A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743 (Fed. Cir. 1983).

REPLY BRIEF UNDER 37 C.F.R. § 41.41  
Application Serial No.: 10/000,219  
Attorney Docket No. Q67539

The Examiner’s alternative contention of obviousness based on Chen regarding claims 1, 7 and 21 is flawed and legally insufficient to sustain a finding of unpatentability based on 35 U.S.C. § 103. The rejection of these claims should therefore be reversed.

**B. Chen – Dependent Claim 3**

The Examiner’s Answer does not address Appellant’s arguments with respect to dependent claim 3. As stated in Appellant’s Brief, although Chen may suggest that *different metals* (i.e., stainless steel versus titanium—respectively having different densities) may be used for top shell 30 or front shell 60, Chen suggests nothing regarding the *thicknesses* of the different metals. Indeed, in rejecting claim 3, the Examiner asserts that, “Chen appears to show the metal pieces have the *same thicknesses*,” which is the *converse* of what the claim requires, and would thus *teach one of skill away* from the invention as claimed. (See Brief at 25-26.)

As further discussed in Appellant’s Brief, the Examiner’s rejection is founded upon a misplaced reliance of caselaw. *In re Rose*, which the Examiner points to in his rejection of claim 3, cannot reasonably be construed as supporting the proposition that it would have been obvious to vary the *relative thicknesses* among the metal pieces themselves, such as in the plural metal pieces of the striking face member defined in claim 3. (See Brief at 26.)

The Examiner has failed to set forth a *prima facie* case of obviousness, and fails to respond to the deficiencies of that rejection, including the improper reliance on *In re Rose*, and the rejection should therefore be reversed.

REPLY BRIEF UNDER 37 C.F.R. § 41.41  
Application Serial No.: 10/000,219  
Attorney Docket No. Q67539

**C. Chen – Dependent Claims 37, 38 and 39**

Dependent claims 37, 38, and 39 respectively depend from claims 1, 7 and 21 and recite the features of laser welding is performed in the same plane on the plurality of metal pieces, which are fixed together by the laser welding as flat surfaces prior to the press forming (claims 1 and 21) or plastic working (claim 7) to form the curved surface portion of the striking face member (claims 1 and 7) or outside common surface (claim 21).

Chen simply does not suggest these further features. As noted previously, Chen does not disclose laser welding of a plurality of metal pieces for its striking face (i.e., main piece 62) or arcuate piece 64. Chen further does not disclose that laser welding is performed “in the same plane”, nor does Chen disclose the claimed fixing together as flat pieces by the laser welding as flat surfaces prior to the press forming, as recited by these claimed. Likewise, the Examiner has not provided a sufficient motivation to modify Chen beyond the bounds of its actual disclosure for reasons analogous to those set forth above. (*See Brief at 26-27.*)

The rejection of claims 37, 38, and 39 represents yet another instance in which the Examiner does not address Appellant’s arguments in his Answer. Appellant submits that the rejections of these claims are improper at least for the reasons advanced in Appellant’s Brief on Appeal.

**D. Chen – Claim 24**

As discussed in Appelleant’s Brief, Chen does not disclose laser welding of a wood golf club head structure, nor does Chen disclose press forming of a laser welded structure, which provides structural differences over a conventionally welded structure. Rather, Chen teaches

REPLY BRIEF UNDER 37 C.F.R. § 41.41  
Application Serial No.: 10/000,219  
Attorney Docket No. Q67539

providing a top shell 30 comprising a titanium main piece 32' welded to an annular piece 34 made of stainless steel so that the top shell can be more easily welded to a stainless steel main body of a wood golf club head. (*See* Brief at 17-18; Chen at 2:32-48.)

Also, the Examiner has failed to establish *prima facie* obviousness, as there is no objective evidence of record to suggest that modifying the disclosure of Chen so as to provide for the claimed laser welding and press forming of the laser welded plurality of metal pieces on a crown member would have been obvious, for reasons analogous to those discussed above. The rejection of claim 24 based on Chen should therefore be reversed.

**E. Chen – Dependent Claim 40**

Claim 40 depends from claim 24 and recites the feature that laser welding is performed in the same plane on the plurality of metal pieces, which are fixed together by the laser welding as flat surfaces prior to the press forming to form the curved surface portion of the crown member.

As noted in Appellant's Brief, Chen does not disclose laser welding of its top shell 30, as noted above, nor does Chen disclose laser welding of plural pieces of a crown member in the same plane prior to press forming. (*See* Brief at 27-28.)

As with claims 37, 28, and 39, the Examiner does not address Appellant's arguments in his Answer. For reasons analogous to those discussed above with respect to claims 37-39, Chen neither discloses nor renders the feature of claim 40 obvious, and the rejection should be reversed.

REPLY BRIEF UNDER 37 C.F.R. § 41.41  
Application Serial No.: 10/000,219  
Attorney Docket No. Q67539

**F. Ciasullo – Independent Claim 24**

As discussed in Appellant's Brief, Ciasullo does not disclose at least the feature of the metal pieces appear on *an outside surface of the crown member* and are fixed together by laser welding and press forming is performed on the plurality of metal pieces that are fixed together to form a curved surface portion of the crown member, as claimed. (*See* Brief at 29-31.) Indeed, contrary to the product-by-process limitations of claim 24, Ciasullo teaches that forging is performed **prior to welding** of the pieces of the crown (i.e., forward top plate member 18 and rearward top plate member 22), which is plainly inconsistent with the claim recitation. (*See* Brief at 30-31.)

As further pointed out, Ciasullo also fails to suggest laser welding of the plurality of metal pieces of the crown member. Rather, Ciasullo teaches that titanium and stainless steel are bonded by **explosion welding** to form rearward top plate member 22, and the rearward top plate member 22 is spot welded to the forward top plate member 18 **after the forging process**, and the pieces of the club are welded in an argon gas chamber, which is followed by grinding and polishing steps. (Ciasullo at 5:21-25.) However, the structure of a surface member of a wood golf club including multiple metal pieces that are forged (i.e., shaped) **prior to** welding by conventional means is structurally distinct from a laser welded structure followed by press forming, as Appellant has discussed with reference to the Hiruta Declaration. (*See* Brief at 30-31; Decl. at 7-8.)

The Examiner does not address the structural distinctions previously identified, nor does the Examiner set forth a rational basis as to why it would have allegedly been obvious in any

REPLY BRIEF UNDER 37 C.F.R. § 41.41  
Application Serial No.: 10/000,219  
Attorney Docket No. Q67539

manner to modify to disclosure of Ciasullo contrary to the disclosed welding *after* forging structure it describes so as to arrive at the claimed invention. Indeed, the Examiner's Answer provides little more than a restatement of his prior rejection, and does not adequately respond to the arguments advanced in Appellant's Brief.

**G.      *Ciasullo – Dependent Claim 40***

Dependent claim 40 depends from claim 24 and recites the features of the laser welding is performed in the same plane on the plurality of metal pieces, which are fixed together by the laser welding as *flat surfaces* prior to the press forming. The Examiner has not given proper weight to these features, and the rejection is improper. Indeed, Ciasullo plainly teaches the opposite of the claim limitation. As previously noted, Ciasullo teaches that forging is performed prior to welding, which is plainly inconsistent with laser welding in the *same plane*, followed by press forming. (*See* Brief at 31.)

The Examiner does not respond to Appellant's arguments regarding this ground of rejection and Appellant submits that the rejection of claim 40 should be reversed.

**H.      *Kosugi in view of Shaw – Claims 1, 7, and 21***

With respect to independent claims 1, 7, and 21, the rejection of these claims is improper because the Examiner has not established *prima facie* obviousness, as discussed in Appellant's Brief on Appeal. (*See* Brief at 31-36.)

In summary, Kosugi does not suggest a striking face member comprised of a plurality of metal pieces. Rather, the striking shell part is taught as being a *single piece* structure. To

REPLY BRIEF UNDER 37 C.F.R. § 41.41

Application Serial No.: 10/000,219

Attorney Docket No. Q67539

compensate for this deficiency, the Examiner turns to Shaw. However, this combination of Kosugi and Shaw is improper and fails to teach or suggest all the features of these claims.

Notably, Shaw's teaching is limited to *iron-type golf clubs*. The reference does not mention putters, nor does the reference mention wood-type golf clubs. The actual scope of the teaching of Shaw is clearly evidenced by the disclosure of the reference itself. Shaw explicitly states, "An object of the present invention is to improve the performance characteristics of *golf irons*." (Shaw at 1:29-30.)<sup>2</sup> Shaw does not include wood golf clubs in its drawings or written description, and there is no suggestion that the teaching for iron golf club striking faces could be applicable to another type of golf club.

As discussed in the 132 Declaration, which has not been properly considered by the Examiner, *significant* differences both in structure and design considerations exist between iron golf clubs and wood golf clubs. The structure of an iron golf club head is not readily interchangeable with that of a wood golf club, as the Examiner alleges. (*See* Brief at 34-35; Decl. at 8.) Moreover, Shaw's welding of an iron golf club head necessarily involves a back portion which is not present in a wood golf club head, such as taught by Kosugi. (*See* Shaw at Figs. 29 and 32.) As with the rejection of claims 1, 7, 21 based on Chen, the Examiner fails to give proper weight to the recitations of laser welding followed by press forming/plastic working.

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<sup>2</sup> Shaw further states, in his background, that "[t]he present invention relates to the head structure of golf clubs, particularly golf irons and is directed more particularly to club heads with varying specific gravity," evidencing the disclosure focusing on a *particular aspect* of iron golf club structure (*See* Shaw at 1:18-20.)

REPLY BRIEF UNDER 37 C.F.R. § 41.41

Application Serial No.: 10/000,219

Attorney Docket No. Q67539

Simply put, the Examiner's rejection fails to establish in any cogent manner how the teaching of an iron type striking face could be modified to be applied to a wood golf club head. Further, the Examiner's remarks demonstrate the flawed obviousness analysis with respect to these claims:

On page 34 of the appeal brief, Appellants attempt to draw the comparison and/difference between the golf club head of Kosugi versus Shaw's golf club head. *It is submitted that Kosugi discloses all features of the claimed invention. Examiner only relied on the striking face feature of Shaw to show the importance of providing a multipiece face component(s).* Such multi-piece face component(s) provide a golf club with different properties such as weight distribution, friction, spin rates, flexural modulus, resilience, and hardness, and aesthetic appearance (Col. 2, lines 13-17, Col. 2, lines 39-43), Col. 3, lines 35-45).

*See Answer at 15 (emphasis added).*

The Examiner's statements contradict his position in the grounds of rejection, in which he states: "Kosugi et al. fails to disclose the striking face member is made of a plurality of metal pieces [sic] are fixed together by laser welding." (*See Answer at 6-7.*) Nowhere does Kosugi describe, nor has the Examiner identified, a striking face member comprising a plurality of metal pieces in Kosugi itself. This inconsistency notwithstanding, the Examiner has provided no rationale to support combining the disparate structures of Kosugi and Shaw in such a manner as to arrive at the claimed invention. The rejection is thus based on impermissible hindsight and should be reversed.

REPLY BRIEF UNDER 37 C.F.R. § 41.41  
Application Serial No.: 10/000,219  
Attorney Docket No. Q67539

***I. Kosugi in view of Shaw – Dependent Claims 3 and 9***

Claim 3 depends from claim 1 and recites the feature of the metal pieces have different thicknesses. Claim 9 depends from claim 7 and recites the compounded metal plate is fabricated by fixing together metal pieces that have different thicknesses. The rejection of these claims is improper at least because the motivation to combine their disparate teachings is improper, for reasons discussed above.

Further, the Examiner has not identified, nor does Shaw disclose, a striking face member having pieces with different thicknesses, as claims 3 and 9 require. Moreover, as noted in Appellant's Brief, the Examiner's citation to 2:39-63 does not support his contention, as this passage mentions nothing regarding differing thicknesses among plural elements of the iron golf club head face. (*See Brief at 36.*) The Examiner does not respond to this argument in his Answer. Appellant again submits that the rejection of these claim is in error.

***J. Kosugi in view of Shaw –Dependent Claims 15 and 16***

Claims 15 and 16 respectively depend from claims 1 and 7 and recite the feature of the plurality of metal pieces are greater than two. Thus, the striking face member of the wood golf club head of claims 1 and 7 is further defined to have a plurality of metal pieces being greater than two pieces. The feature of claims 15 and 16 would not have been obvious in view of Kosugi in view of Shaw and the rejection is improper.

The Examiner does not address Appellant's arguments concerning the rejection of claims 15 and 16 based on Kosugi in view of Shaw. (*See Brief at 37.*) Appellant submits that the rejection of these claims is in error for the reasons previously stated.

REPLY BRIEF UNDER 37 C.F.R. § 41.41

Application Serial No.: 10/000,219

Attorney Docket No. Q67539

**K. Peterson - Claim 27**

With respect to independent claim 27, Peterson neither anticipates all the claimed features, nor has the Examiner established *prima facie* obviousness. Appellant's arguments concerning the improper rejection of claim 27 based on Peterson are set forth in detail in Appellant's Brief at 37-38. In response, the Examiner largely appears to restate his prior grounds of rejection. (*See* Answer at 15-16.) This rejection is likewise based on an improper analysis of the product-by-process recitations that are claimed. Notably, Peterson's teaching of either casting from the same material or separately constructing the detachable cap 36, which is attached to skirt 30, is inconsistent with the claimed laser welding of the plurality of metal pieces followed by press forming the metal pieces that are fixed by laser welding to form a curved surface portion. (*See* Brief at 38.)

Appellant reiterates that Peterson fails to disclose all the structural features of claim 27, and the Examiner's alternative contention of obviousness is improperly based on hindsight reconstruction. The rejection of claim 27 should therefore be reversed.

**L. Peterson – Dependent Claim 41**

Claim 41 depends from claim 40 and further recites the features of laser welding is performed in the same plane on the plurality of metal pieces, which are fixed together by the laser welding as flat surfaces prior to the press forming to form the curved surface portion of the side wall member. As noted previously, Peterson would teach the opposite of the requirement of claim 41 because, as noted above, Peterson teaches either casting from the same material or separately constructing the detachable cap 36, which is attached to skirt 30. (*See* Brief at 39.)

REPLY BRIEF UNDER 37 C.F.R. § 41.41  
Application Serial No.: 10/000,219  
Attorney Docket No. Q67539

The Examiner does not directly respond to this noted distinction in his Answer, but again appears to rely on an improper interpretation of the product-by-process limitations, as recited. The rejection of claim 41 is improper at least for the reasons discussed in Appellant's Brief.

**M. Galy - Claim 30**

Independent claim 30 defines a golf club comprising a sole member which includes a plurality of metal pieces, wherein the metal pieces appear on an outside surface of the sole member and are fixed together by laser welding and press forming is performed on the plurality of metal pieces that are fixed together to form a curved surface portion of the sole member. Galy fails to anticipate all the claimed features, at least because the structure defined by these claims is not disclosed by Galy, and the Examiner has failed to establish *prima facie* obviousness, as discussed in Appellant's Brief at 39-40.

Notably, the structure defined by claim 30, which requires laser welding of the plurality of pieces of the sole member, followed by press forming, is structurally distinct from the separately formed pieces of Galy which are attached *after being formed*. Further, the Examiner has failed to establish that modifying Galy so as to provide a laser welded and press formed structure would have been *prima facie* obvious, at least for reasons analogous to those discussed above with respect to Chen.

The rejection of claim 30, in which the Examiner again fails to afford proper patentable weight to all claim recitations, including product-by-process recitations, is improper and should be reversed.

REPLY BRIEF UNDER 37 C.F.R. § 41.41  
Application Serial No.: 10/000,219  
Attorney Docket No. Q67539

**N. *Galy – Dependent Claim 42***

Claim 42 depends from claim 30 and recites the features of laser welding is performed in the same plane on the plurality of metal pieces, which are fixed together by the laser welding as flat surfaces prior to the press forming to form the curved surface portion of the sole member. As noted in Appellant's Brief, Galy would teach the opposite of the requirement of claim 42 because, Galy teaches that an arc-shaped portion 32 is *separately formed* and then attached to the sole plate 11. (*See* Brief at 40-41.) Likewise, the Examiner has failed to provide a sufficient motivation to modify the disclosure of Galy, for reasons analogous to those discussed above. The rejection of claim 42 is in error and should be reversed.

**CONCLUSION**

For the above reasons as well as the reasons set forth in Appeal Brief, Appellant respectfully requests that the Board reverse the Examiner's rejections of all claims on Appeal. An early and favorable decision on the merits of this Appeal is respectfully requested.

Respectfully submitted,



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